Richard P. Feynman, Robert B. Leighton, Matthew Sands, 1974, The Feynman Lectures on Physics Vol. III

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Preface

これは [1] の計算を追ったものである.

目次

第 1 章

Classical Field Theory

1.1 The Dynamics of Fields

1.1.1 An Example: The Klein-Gordon Equation

1.1.2 Another Example: First Order Lagrangians

1.1.3 A Final Example: Maxwell's Equations

1.1.4 Locality, Locality, Locality

1.2 Lorentz Invariance

1.3 Symmetries

1.3.1 Noether's Theorem

1.3.2 An Example: Translations and the Energy-Momentum Tensor

1.3.3 Another Example: Lorentz Transformations and Angular Momentum

(1.50).

$$\begin{aligned}
\text{LHS} &= (\delta^{\mu}{}_{\sigma} + \omega^{\mu}{}_{\sigma})(\delta^{\nu}{}_{\tau} + \omega^{\nu}{}_{\tau})\eta^{\sigma\tau} \\
&\simeq (\delta^{\mu}{}_{\sigma}\delta^{\nu}{}_{\tau} + \delta^{\nu}{}_{\tau}\omega^{\mu}{}_{\sigma} + \delta^{\mu}{}_{\sigma}\omega^{\nu}{}_{\tau})\eta^{\sigma\tau} \\
&= \eta^{\mu\nu} + \eta^{\sigma\nu}\omega^{\mu}{}_{\sigma} + \eta^{\mu\tau}\omega^{\nu}{}_{\tau} \\
&= \eta^{\mu\nu} + \omega^{\mu\nu} + \omega^{\nu\mu} \\
\text{RHS} &= \eta^{\mu\nu} \\
\therefore\ & \underbrace{\omega^{\mu\nu} + \omega^{\nu\mu} = 0}
\end{aligned}$$

1.3.4 Internal Symmetries

1.4 The Hamiltonian Formalism

第 2 章

Free Fields

2.1 Canonical Quantization

2.1.1 The Simple Harmonic Oscillator

2.2 The Free Scalar Field

2.3 The Vacuum

2.3.1 The Cosmological Constant

2.3.2 The Casimir Effect

参考文献

[1] Matthew Sands Richard P. Feynman, Robert B. Leighton. 1974. The Feynman Lectures on Physics Vol. III. https://www.feynmanlectures.caltech.edu/III_toc.html